

Abstract

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Study program: Pharmacy

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Title of diploma thesis: Evaluation of activity of potencial antibiotic substances through the use of microdilution broth method II

Background: To evaluate the antibacterial activity of the compounds synthesized by the Department of Pharmaceutical Chemistry and Drug control, Faculty of Pharmacy in Hradec Králové, Charles University in Prague under the leadership of prof. PharmDr. Martin Doležal, Ph.D.

Methods: Using broth microdilution method was tested antibacterial activity at eight bacterial strains, namely *Staphylococcus aureus*, *Staphylococcus aureus* methicilin resistant, *Staphylococcus epidermidis*, *Enterococcus* sp., *Escherichia coli*, *Klebsiella pneumoniae*, *Klebsiella pneumoniae* ESBL positive and *Pseudomonas aeruginosa*.

Results: Test substances were divided into 5 groups according to similarities in the chemical structure. The best antibacterial activity was observed in the group of derivatives of N-benzyl-6-(alkylamino)pyrazine-2-carboxamide.

Conclusion: Antibacterial activity was detected in 10 of 24 tested compounds. From active substances, all but one danced only Gram-positive bacteria. Among the most sensitive test strains to the substances can be included *Staphylococcus aureus*, *Enterococcus* sp., *Staphylococcus aureus* methicillin-resistant and *Staphylococcus epidermidis*.

Key words: antibacterial resistance, microdilution broth method, antibiotics, screening of antibacterial activity